

What is claimed is:

1. An aerosolization system comprising:
5 an aerosolization device comprising a chamber adapted to receive a receptacle; and
a receptacle containing a pharmaceutical formulation, the receptacle comprising a wall having a weakened portion that opens when a force is applied,
10 whereby an opening into the receptacle may be created at the weakened portion before, during, or after insertion of the receptacle into the chamber by applying a force to the receptacle.

2. An system according to claim 1 wherein the weakened portion comprises a
15 region of the wall altered so as to fracture at a force less than would be necessary without the alteration.

3. A system according to claim 1 wherein the weakened portion comprises a
scored region and/or a portion of the wall having a reduced thickness.

20 4. A system according to claim 1 wherein the aerosolization device comprises a force applying member to apply a force to the weakened portion to create the opening in the receptacle.

25 5. A system according to claim 4 wherein the force applying member comprises a moveable portion of the chamber.

6. A system according to claim 5 wherein the movable portion is a flexible wall.

30 7. A system according to claim 4 wherein the force applying member comprises an opening mechanism slidably moveable within the chamber.

8. A system according to claim 7 wherein the opening mechanism comprises a opening member having a blunt tip.

9. A system according to claim 1 wherein the receptacle comprises a capsule.

10. A system according to claim 9 wherein the capsule comprises a wall comprising one or more of gelatin, hydroxypropyl methylcellulose, polyethyleneglycol-compounded hydroxypropyl methylcellulose, hydroxypropylcellulose, and agar.

11. A system according to claim 1 wherein the receptacle contains a powder pharmaceutical formulation.

12. A system according to claim 11 wherein the powder pharmaceutical formulation comprises particles having a mass median diameter less than 10 μm .

13. A system according to claim 11 wherein the powder pharmaceutical formulation has a moisture content below 5% by weight.

14. A method of aerosolizing a pharmaceutical formulation, the method comprising:

providing an aerosolization device comprising a chamber;
providing a receptacle containing a pharmaceutical formulation, the receptacle comprising a wall having a weakened portion that opens when a force is applied;
applying a force to the receptacle to create an opening at the weakened portion;

before, during, or after applying the force to the receptacle, inserting the receptacle into the chamber; and

aerosolizing the pharmaceutical formulation in the chamber.

15. A method according to claim 14 wherein the force is applied by a blunt member.

16. A method according to claim 14 wherein the force is applied after the receptacle is inserted into the chamber.

5 17. A method according to claim 16 wherein the force is applied by moving a wall of the chamber.

18. A method according to claim 16 wherein the force is applied by sliding a member within the chamber.

10 19. A method according to claim 14 wherein the applied force causes the weakened portion to break at a scored region.

15 20. A method according to claim 14 wherein the applied force causes the weakened portion to break at a region of reduced wall thickness.

21. A method according to claim 14 comprising aerosolizing the pharmaceutical formulation by dispersing the pharmaceutical formulation in an air or gas stream.

20 22. A method according to claim 21 wherein the air or gas stream is generated by a users inhalation.

23. A method according to claim 21 wherein the air or gas stream is from a source of pressurized gas.

25 24. A method according to claim 14 wherein the receptacle comprises a capsule.

25. A method according to claim 14 wherein the receptacle contains a powder pharmaceutical formulation.

26. A method according to claim 25 wherein the powder pharmaceutical formulation comprises particles having a mass median diameter less than 10 μm .

27. A receptacle for use in an aerosolization device comprising a chamber adapted to receive the receptacle, the receptacle comprising:
a wall having a weakened portion that opens when a force is applied; and
a pharmaceutical formulation within the wall,
whereby an opening may be created at the weakened portion before, during, or after insertion of the receptacle into the chamber by applying a force to the receptacle.

28. A receptacle according to claim 27 wherein the weakened portion comprises a region of the wall altered so as to fracture at a force less than would be necessary without the alteration.

29. A receptacle according to claim 27 wherein the weakened portion comprises a scored region and/or a portion of the wall having a reduced thickness.

30. A receptacle according to claim 27 wherein the weakened portion is opened when a blunt force is applied.

31. A receptacle according to claim 27 wherein the receptacle is a capsule.

32. A receptacle according to claim 31 wherein the capsule comprises a wall comprising one or more of gelatin, hydroxypropyl methylcellulose, polyethyleneglycol-compounded hydroxypropyl methylcellulose, hydroxypropylcellulose, and agar.

33. A receptacle according to claim 27 wherein the receptacle contains a powder pharmaceutical formulation.

34. A receptacle according to claim 33 wherein the powder pharmaceutical formulation comprises particles having a mass median diameter less than 10 μm .

35. A receptacle according to claim 33 wherein the powder pharmaceutical formulation has a moisture content below 5% by weight.